

SECTION 5. GENERAL NOTES:

- 5.1 The following notes shall be provided on all Developer constructed water distribution and sanitary sewer system facility construction plans and specifications and compliance is required by the Contractor/Developer:

JCSA GENERAL NOTES FOR WATER DISTRIBUTION AND SANITARY SEWER SYSTEMS: (Revised May 2011)

- A. All components of the water distribution and sanitary sewer system shall be installed and tested in accordance with the latest edition of the JCSA Design and Acceptance Criteria for Water Distribution and Sanitary Sewer Systems, the HRPDC Regional Construction Standards (Fifth Edition with amendments dated December 2010), and the Commonwealth of Virginia Department of Health Waterworks and Sanitary Sewerage Regulations. The Contractor shall use only new materials, parts, and products on all projects. All materials shall be stored so as to assure the preservation of their quality and fitness for the work. A copy of the JCSA Design and Acceptance Criteria and HRPDC Regional Construction Standards must be kept on-site by the contractor during time of installing, testing, and conveying facilities to JCSA.
- B. The Contractor/Developer shall acquire a Certificate to Construct Water and Sanitary Sewer Facilities prior to commencement of construction of any water or sanitary sewer facilities.
- C. A preconstruction meeting shall be held between JCSA, the Developer, the Contractor including relevant subcontractor(s), and the Project Engineer prior to issuance of a JCSA Certificate to Construct. It shall be the responsibility of the Contractor to schedule this meeting with JCSA and coordinate with the other attendees.
- D. The Developer's representative shall submit shop drawings for all materials and receive JCSA approval prior to commencement of construction. All materials ordered and installed prior to JCSA's review and acceptance will be at the Contractor's/Developer's risk.
- E. Pipe lines and services shall be installed after grading to within 6-inches of final grade and prior to placement of base material.
- F. All water mains shall be fully flushed, pressure tested, and disinfected and satisfactory bacteriological samples obtained, in accordance with JCSA Design and Acceptance Criteria. Flushing of water mains shall be scheduled with the JCSA Inspector minimum 3 business days prior to the flushing. Contractor shall provide the required duration and volume to the Inspector. Flushing will be scheduled only on Mondays, unless authorized otherwise by JCSA, and will be on a first come-first serve basis.
- G. Routine periodic inspections during construction will be provided by JCSA. These inspections do not relieve the Developer/Contractor/Owner from his obligation and

responsibility for constructing a water distribution and sanitary sewer system in strict accordance with the JCSA Design and Acceptance Criteria.

- H. Any field modifications or changes to the approved plans shall be verified and checked by the Engineer of Record and approved by JCSA prior to any field modifications or changes. All approved changes and field modifications shall be accurately indicated on the record drawings.
- I. All lots shall be provided with water service and sanitary sewer connections. The connections shall be extended from the main to the property line or easement line, and shall terminate with a yoke in a meter box, or at the clean out, set at final finished grade. Meters for all lots (units) shall be paid for by the Developer or builder and installed by JCSA.
- J. Any required easements, permits and approvals shall be acquired by the Developer prior to commencement of water main and/or sanitary sewer construction.
- K. The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. The Contractor shall erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for safety and protection. The Contractor shall also notify "Miss Utility" at 1-800-552-7001 or 811 prior to performing any underground excavation.
- L. Water meter box installation shall maintain a minimum 18-inch horizontal edge-to-edge clearance from driveways and/or drive paths, sidewalks, bike paths, curbing and adjacent water meter boxes.
- M. Only JCSA personnel are authorized to operate valves on existing JCSA water mains and sanitary force mains. Once a system has been hydraulically energized, JCSA will be responsible for operating the valves. The Contractor shall contact JCSA Operations at 757-229-7421 if there is an emergency or need to open/close a valve.
- N. Any existing unused well(s) shall be abandoned in accordance with State Private Well Regulations and James City County Code.
- O. Bedding of JCSA utilities shall be in accordance with HRPDC Detail EW_01, Type III for rigid pipe and Type IV for PVC pipe.
- P. No trees, shrubs, structures, fences, irrigation mains, invisible pet fences or other obstacles shall be placed within an easement which would render the easement inaccessible by equipment. Shrubs shall be a minimum of 5 feet, and trees a minimum of 10 feet, from the center of water and sanitary sewer pipelines.

- Q. Joint restraint shall be provided in accordance with minimum requirements of JCSA detail JR.1, unless shown otherwise on the plans. All pressure pipelines shall have joint restraint. Fire hydrants shall be restrained at least one full joint of pipe in each direction on the mainline.
- R. Proposed water and sanitary sewer systems shall maintain a minimum horizontal separation of 5-feet from other utilities and structures, including but not limited to storm sewers, street lights, etc. Water and sanitary sewer facilities shall have a minimum 10-foot horizontal edge-to-edge separation.
- S. Any proposed backflow prevention device and/or grease trap must be inspected by the JCSA Utility Special Projects Coordinator at (757) 259-4138.
- T. The Contractor/Developer shall acquire a Certificate to Construct Water and Sanitary Sewer Facilities prior to commencement of construction of any water or sanitary sewer facilities. Plumbing inside of proposed buildings must be inspected by JCSA's Utility Special Projects Coordinator at (757) 259-4138, for potential cross connections. Any cross connections must be protected by the appropriate backflow prevention device(s)".
- U. Easements denoted as "JCSA Utility Easements" are for the exclusive use of the James City Service Authority and the property owner. Other utility service providers desiring to use these easements with the exception of perpendicular utility crossings must obtain authorization for access and use from JCSA and the property owner. Additionally, JCSA shall not be held responsible for any damage to improvements within this easement, from any cause.
- V. JCSA shall not be held responsible for any pavement settlement due to pipe bedding, backfilling, backfill materials or compaction for Water or Sanitary Sewer facilities for this project.
- W. Fire hydrants to be installed within existing or proposed VDOT right-of-ways shall be located in accordance with VDOT Requirements.
- X. Privately owned utilities, (e.g., water and sewer lines and private fire service mains), shown on this plan are regulated by the Virginia Uniform Statewide Building Code, and enforced by the James City County Building Safety and Permits Division. These privately owned utilities must comply fully with the International Plumbing Code, the National Fire Protection Association Standard 24, and the Virginia Statewide Fire Prevention Code. Contractors working from this site plan are cautioned not to install or conceal privately owned site utilities without first obtaining the required permits and inspections.
- Y. Sanitary sewer laterals shall not connect to the mainline within 5-feet of a manhole. Laterals upstream and within 5-feet of the manhole shall connect directly into the manhole where necessary.

- Z. All private Underground Fuel Storage tanks shall have leak monitors and secondary containment in accordance with Virginia State Department of Environmental Quality requirements.

5.2 The following notes are a supplement to the JCSA General Notes for Water Distribution Systems and shall be provided on all Developer constructed water production facility construction plans and specifications and compliance is required by the Contractor/Developer:

JCSA GENERAL NOTES FOR WATER PRODUCTION FACILITIES:
(Revised March 2008):

- A. All well facilities shall be designed by a Commonwealth of Virginia Licensed Professional Engineer (Consultant), and the design, construction and installation shall be in accordance with the following:
 - 1. Commonwealth of Virginia Department of Health (VDH) Waterworks Regulations.
 - 2. James City Service Authority (JCSA) Design and Acceptance Criteria and policies.
 - 3. Approvals of JCSA and VDH shall be obtained prior to commencement of construction.
- B. Construction plans shall be submitted through the James City County Planning Department for review and approval. The Developer/Contractor/Consultant shall supply minimum three (3) sets of construction plans and specifications detailing all phases of the well and water production construction including testing, materials, shop drawing submittals, painting and installation. These shall be submitted to, and approved by, JCSA.
- C. The Developer/Contractor/Consultant shall be responsible for assuring that all work is performed in accordance with the approved plans and specifications. Any deviation from the approved plans and specifications shall be approved by JCSA and VDH prior to performing such work.
- D. Drilling fluid shall be sodium bentonite drilling clay commercially processed to meet or surpass the viscosity specifications in API "Standard 13-A for Drilling Fluid Materials", or approved equal.
- E. Organic drilling muds shall not be used in any phase of drilling or construction. Lime shall not be used to thicken the drilling mud.
- F. Drilling fluid mix water shall be from a potable source and initially Chlorinated to 50 mg/l free Chlorine concentration. Periodic addition will be required to maintain a 10 mg/l free Chlorine residual. All drilling fluids additives shall comply with industry

standards and practices.

- G. During drilling and well construction, a “Driller’s Log” shall be prepared and submitted to JCSA upon completion of the drilling.
- H. Upon completion of the geophysical logging, recommendations shall be submitted to JCSA for approval prior to the installation of the well casing and screens.
- I. Grout of the surface casing shall be placed under pressure using an external tremie pipe in one continuous operation to a minimum depth of 100-feet.
- J. Grouting operations shall be performed in the presence of JCSA’s Inspector and a VDH representative. Both agencies shall be notified a minimum of 48-hours in advance of the grouting operations.
- K. Grout mixtures shall be approved by the VDH and JCSA prior to installation. Grout shall be firmly set (minimum of 72-hours) prior to proceeding with the well construction.
- L. The well casing shall be stainless steel 316L. PVC well casing may be used with the prior approval of the JCSA and VDH as to material specifications and construction installation methods.
- M. The screen shall be stainless steel 316L continuous slot wire wound screen, reinforced with longitudinal bars; the bars having a cross section that will form an opening between each adjacent coil of wire.
- N. Prior to installation, the Consultant/Driller’s recommended screen slot and gravel size along with supporting calculations shall be submitted to JCSA for approval.
- O. Prior to gravel packing, the hole shall be conditioned to ensure stability and to provide a clear filter cake. The gravel shall be disinfected by adding sufficient Chlorine to the placement fluid to produce a minimum Chlorine residual of 400 mg/l.
- P. The well shall be developed in such a way as to remove the fines and sort the gravel pack. Records of the development steps and the chemicals used shall be submitted to JCSA.
- Q. A well plumbness and alignment, 48-hour pump test and recovery test shall be performed and the results documented and submitted to JCSA.
- R. Water samples shall be collected and analyzed for all parameters, required by the VDH, including VOC’s.
- S. Final pump size and setting recommendations, along with test results and supporting documentation, shall be submitted to JCSA for review and approval prior to installation.

- T. The well shall be disinfected in accordance with VDH requirements.
- U. The Developer shall obtain construction and operational permits from the VDH and DEQ.
- V. The Developer shall obtain all easements, approvals and regulatory permits.
- W. The Developer shall acquire and provide 3-phase electrical service for the facility.
- X. The water production facilities shall be equipped with a standby generator. Generator shall be rated for continuous duty and provide all power to operate the complete facility and systems.
- Y. The water production facility shall be equipped with a JCSA compatible SCADA system.
- Z. Shop drawings and operational, maintenance and repair manuals shall be provided to JCSA, along with a one-year warranty on all facility components and workmanship.
- AA. Record drawings shall be submitted and the facilities shall be dedicated as a public water supply prior to acceptance by JCSA. All required easements shall be dedicated to JCSA with recorded documents submitted to JCSA.
- BB. The facility shall be fenced.